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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,280	08/20/2001	In Hwan Choi	2080-3-23	6389

35884 7590 07/21/2004

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EXAMINER

AN, SHAWN S

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 07/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/933,280

Applicant(s)

CHOI ET AL.

Examiner

Shawn S An

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Citta et al (5,602,595) in view of Fimoff et al (5,563,884).

Regarding claims 1-2, 8, 18-19, 25, 33, Citta et al discloses a VSB transmitter for use with MPEG data and a supplemental signal, comprising:

a forward error correction coder (Fig. 1, FEC, the result of FEC coder) for coding the supplemental data signal;

a header inserter (Fig. 3) for inserting a header to the supplemental data;

a multiplexer (Fig. 2, 16, 24) for multiplexing the MPEG data and the supplemental data having the header inserted thereto in at least one of a predetermined mux ratio and unit; and

a VSB transmission system (Fig. 2, 28) for modulating an output from the mux to form a plurality of segments including at least one segment from the supplemental data and at least one segment from the MPEG data signal.

Citta et al does not specifically disclose a null sequence inserter for inserting a null sequence to the supplemental data being subject to the FEC coder for generating a predefined sequence.

However, Fimoff et al teaches a null sequence inserter for inserting null or auxiliary packets into its bitstreams for purpose of filling or padding.

Furthermore, the Examiner takes Official notice that Reed-Solomon coder for coding the supplemental data signal or MPEG signal is well known in the art.

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing a VSB signal format as taught by Citta et al to incorporate the teaching as above as taught by Fimoff et al for inserting a null sequence to the supplemental data being subject to the FEC coder for generating a predefined sequence, thereby a header inserter inserts a header to the supplemental data having the null sequence inserted therein al so as to fill or pad the corresponding packets as needed.

Regarding claim 38, Citta et al discloses VSB signal format comprising:

an MPEG header (HDR) region (Fig. 3B); and

a supplemental data region having original supplemental data (Fig. 2, 13).

Citta et al does not specifically disclose supplemental data region having null sequence data.

However, Fimoff et al teaches inserting null or auxiliary packets into its bitstreams for purpose of filling or padding.

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing a VSB signal format as taught by Citta et al to incorporate the teaching as above as taught by Fimoff et al so as to fill or pad the corresponding packets as needed.

Regarding claims 3, 9, 20, 26, 35-36, and 39, since MPEG transport packet has 184 bytes of payload information for video, it is considered quite obvious to have

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original supplemental data of 92 bytes and 92 bytes of null sequence data, resulting in 184 bytes. In other words, inserting a null sequence having the same bytes with the supplemental data packet into each one of the supplemental data packets to provide two supplemental data packets each having the null sequence inserted therein.

Regarding claims 4, 10, 21, and 27, Citta et al discloses header adding three bytes of header information to the data packet containing program identification (Fig. 3B).

Regarding claims 5, 11, 22, and 28, it would have been obvious to divide the one data packet of supplemental data signal into a plurality of data packets for efficient transmission.

Regarding claims 6, 12, 23, and 29, it would have been obvious for the null sequence to have substantially the same occurrence of bits "1" and "0" to alternate the supplemental data and the null data.

Regarding claims 7 and 24, Citta et al discloses an interleaver receiving data from FEC for interleaving the supplemental data with FEC code.

Regarding claims 13 and 30, Citta et al discloses multiplexing ratio varies with amount of MPEG data packets representing the MPEG signal and the supplemental data signal (24).

Regarding claims 14 and 31, Citta et al discloses ratio of supplemental data packets and the MPEG data packets being one segment to one segment (Fig. 5A).

Regarding claims 15 and 32, Citta et al discloses ratio of supplemental data packets and the MPEG data packets being one segment to two segment (Fig. 5C). Therefore, it would have been obvious to ratio of supplemental data packets and the MPEG data packets being one segment to three segment to establish a 1:3 relationship.

Regarding claim 16, Citta et al discloses the multiplexer (24) responsive to a field sync signals used for synchronizing a data frame of the VSB transmission system (Fig. 2, 22).

Regarding claim 17, Citta et al discloses data field having 312 data segments and one field synchronizing segment (Fig. 1).

Regarding claims 34 and 40, the Examiner takes Official notice that Reed-Solomon parity bytes such as in Reed-Solomon coder are well known in the art for correcting errors. Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing a VSB signal format as taught by Citta et al to incorporate Reed-Solomon preset bytes included in at least only one of the supplemental data packets for correcting errors.

Regarding claim 37, Citta et al discloses the MPEG header having an ID code for identifying whether the MUX data is supplemental data packet of the MPEG data packet (Fig. 16, Fig. 3).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A) Limberg (5,184,921), Method for transmitting VSB digital TV with carrier frequency near co-channel NTSC audio carrier frequency.

B) Citta et al (5,087,975), VSB HDTV transmission system with reduced NTSC co-channel interference.

C) Hershberger (6,724,832 B1), VSB generator particularly for digital TV.

D) Leatherbury et al (6,763,025 B2), Time division multiplexing over broadband modulation method and apparatus.

E) Willming (5,923,711), Slice predictor for a signal receiver.

F) Choi et al (6,760,077 B2), VSB reception system with enhanced signal detection for processing supplemental data.

5. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

6. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to **Shawn S An** whose telephone number is 703-305-0099. The Examiner can normally be reached on Flex hours (10).

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7. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SSA

Primary Patent Examiner

7/15/04